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ABSTRACT

The differential effects of three values of the nonverbal component of communication on the productivity of inner-city and suburban fourth graders are explored. Eight categories of nonverbal behavior were selected, and an experimental teacher trained to employ them in the classroom, while at the same time enacting either a positive, negative or neutral affect style. Three tasks were utilized: (1) accuracy in following directions; (2) accuracy in hearing and extracting information from a verbal context; and (3) amount of words produced in a required essay. Results show that: (1) the middle and lower-middle socio-economic children responded to all affect-styles with no apparent differences; and (2) the lower socio-economic class children responded differently from the other two on one of the tasks and under negative affect-style. A number of hypotheses based on the findings are generated. (TL)

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"AN EXPERIMENTAL FIELD STUDY OF THE IMPACT OF NONVERBAL COMMUNICATION OF AFFECT ON CHILDREN FROM TWO SOCIO-ECONOMIC BACKGROUNDS"

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"An Experimental Field Study of The Impact of Nonverbal Communication of Affect on Children From Two Socio-Economic Backgrounds"*

Ruth R. Middleman and Thomas H. Hawkes

Introduction

A model of multiple channels in a communication has gained increasing attention through the work of Birdwhistell (1968; 1970), Wiener and Mehrabian (1968), Scheflen (1967), Ekman and Friesen (1969), Davitz (1964), and others. The exploratory experimental research of Wiener and Mehrabian (1968), Kashinsky and Wiener (1969), and Brooks, et al. (1969), has examined the differential responsiveness of middle and lower class children to words and tone in communication. Their findings lend support to the work of Reissman (1962; 1964), Bernstein (1962; 1965), and Deutsch (1967) that middle and low socio-economic class children do employ different language codes.

Purpose

This study explored the differential effects of three values of the nonverbal component of communication upon the socio-economic group

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* This paper is a synopsis of a doctoral thesis of the first author, Ruth R. Middleman. The second author, Thomas H. Hawkes, was chairman of the committee. Other committee members were Norma F. Furst and Emil Soucar.

described in the literature as "the disadvantaged children" who attend the inner-city ghetto schools and upon the middle and lower-middle socio-economic groups who populate the suburban schools. This study examined a complex or gestalt of specified nonverbal behaviors, derived from research findings, that could be combined together as conveyors of a particular "affect-style", i.e., the response of addressees to a given cluster of nonverbal behaviors could lead one to classify these behaviors as negative, or positive, or neutral in communication value.

Unlike earlier laboratory research, this study was a field experiment conducted in an inner-city and in a suburban elementary school. Children were tested in a group situation rather than individually. Employing an inter-system theoretical position with a pragmatic focus upon the effects of a teacher's nonverbal communications upon fourth graders' productivity, this study measured responses of children from two different socio-economic groups in terms of three tasks that emphasized, (1) accuracy in following directions (a drawing task), (2) accuracy in hearing and extracting information from a verbal context, and (3) amount of words produced in a required essay.

Method

A typology of nonverbal behavioral cues was developed from a rev iew of relevant research findings. This typology specified negative,

positive, and neutral values of nonverbal behaviors in three components of human interaction, i.e., valuation, accommodation, and accessibility. The nonverbal behaviors were arranged in eight categories: distance behavior, eye movements, facial expressions and head nods, body movements and positions, arm motions, leg movements, vocalizations, and intonation. Guided by the specific behaviors which the typology outlined, an experimental teacher was trained to enact the negative, the positive, and the neutral affect-style as she taught her lesson via a prepared, memorized script. Through this device, the verbal component of the communication was held constant while the nonverbal components were systematically varied. A videotape was made of this teacher using each affect-style. Content analyses of each videotape were obtained through use of 9 rating observation guides used by three trained observers.

Ninety fourth grade children from an inner-city school and ninety fourth grade children from a lower-middle class suburban school were randomly selected and randomly assigned to one of the three experiemtnal treatment conditions in each school, making a total sample of 180 children in 6 treatment groups of 30 each. Achievement data were obtained for the subjects of the inner-city school; intelligence scores for the subjects of the suburban school. Following the experiment, each group of subjects was given an assessment questionnaire to obtain data on subjects' evaluation of the teacher in the videotape. (See attached Table 5) Similar assessment data was obtained from 90 graduate students who also viewed the videotapes.

Hypotheses

It was hypothesized that children respond with greater productivity to positive affect than to negative affect, to positive affect than to neutral affect, and to negative affect than to neutral affect. It was further hypothesized that the difference in productivity in response to affect (positive or negative) as opposed to no affect (neutral) is greater among children from the lower socio-economic backgrounds than among those from the lower-middle and middle socio-economic backgrounds.

Results

Two-way analyses of variance and Tukey multiple comparison procedures were performed. (See attached Tables 1, 2, 3, & 4) With respect to socio-economic situation it was found that the white lower-middle class subjects were more productive than black lower class children on all tasks, under all affect-styles. This finding was expected and not of major interest to the study. Obviously the combination of race and socio-economic class are confounded in this study by other variables such as I.Q., achievement, differential past experiences, anxiety, etc.

With regard to affect-style it was found that there were no significant effects on any of the tasks for the white lower-middle socio-economic class subjects. However, it was found that on Task 1, a drawing task which measured ability to follow directions, that the black lower-socio-economic subjects were more productive in response to the negative

affect-style than they were to the positive or neutral affect-style. There was no difference in their responses to the neutral and positive affect-styles. These findings partially support the findings of Kashinsky and Wiener (1969), and Brooks, et al. (1969) so far as a differential response of lower and lower-middle and middle socio-economic groups.

From descriptive data obtained from the administration of the post experimental assessment questionnaire preference for the teacher using each of the three affect-styles was obtained. While the lower-middle and middle class subjects preferred the teacher in positive, negative, and neutral affect-style order ($p < .05$), the lower socio-economic group showed no preference among the three affect-styles, except perhaps a slight but not significant preference for neutral affect-style. In general, the children were more "tolerant" and accepting of all affect-styles than were the adults who assessed the three affect-styles.

Discussion

The middle and lower-middle socio-economic group, as in the earlier experimental research studies, responded to all affect-styles with no apparent differences. Perhaps they were able to attend to the verbal content despite any attending nonverbal behaviors. The lower socio-economic class children responded differently from the lower-middle and middle group, on Task 1 and under negative affect-style. Possibly

the obvious culture-bound differences in the early life learnings of the two socio-economic groups and the culture-bound nature of the early learned, nonverbal behaviors is the major explanation for this finding.

In considering the lower socio-economic groups' response to Task 1 alone several possible explanations were suggested: the simpler conceptual skill demanded in following directions and the more familiar nonverbal drawing skill demanded might both have led to a more anxiety-free situation during the first task that left the subjects able to be more sensitive to the affect-style component. Further, as the first in a series of tasks, greater interest in the testing situation and lack of sequence effect (non-success in subsequent tasks) might have helped the lower socio-economic group perform more successfully, and with a higher level of aspiration.

Contrary to prediction, for the lower socio-economic group, negative affect rather than positive seemed to be the treatment condition eliciting the most productive response, at least on the first task. The following speculations were posed. Possibly, as in some earlier research, negative high control classroom atmosphere may be correlated with successful performance. Contrasting experimental conditions from the research of Brooks, et al. (1969) and Kashinsky and Wiener (1969), whose findings favored a positive affective condition, included: age of subjects, possibility of three additional years' of

school influences with negative affect-style teaching, the influence of a group administered test and a more class-like testing situation, and a more central, confronting role of the experimentor, i.e., the teacher on videotape.

Further possible alternate hypotheses include differential teacher role expectations for the two socio-economic classes. That is, the lower class group might expect and respond to an angry, demanding teacher with a "no nonsense" classroom atmosphere where the responsibilities of the teacher and learner are clearly defined. Differences in early life learnings and child rearing practices also might possibly be related to this different role expectation of the teacher. The brevity of the entire treatment condition and the findings that the negative influence seemed to matter only on the first task led to some speculation as to the possiblity of a curvilinear relationship of negative affect with performance. Finally, the suggestion was offered that the more important difference in teacher nonverbal behavior might rest in the affective versus nonaffective area rather than in the direction of the affect, i.e., positive or negative.

TABLE 1

MEANS AND STANDARD DEVIATIONS OF SCORES ON THREE TASKS FOR CHILDREN FROM LOWER AND FROM MIDDLE AND LOWER-MIDDLE SOCIO-ECONOMIC BACKGROUNDS UNDER NEGATIVE, POSITIVE, AND NEUTRAL TEACHER AFFECT-STYLES

Task	Socio-Economic Background	Negative		Positive		Neutral	
		M	SD	M	SD	M	SD
1	Lower	12.63	2.27	10.17	4.19	10.57	3.36
1	Middle and Lower-Middle	15.60	.62	14.80	1.86	14.27	1.74
2	Lower	1.93	1.41	1.80	1.32	1.43	1.28
2	Middle and Lower-Middle	3.47	.93	3.40	1.22	3.53	.94
3	Lower	13.10	12.16	10.17	12.15	18.00	17.92
3	Middle and Lower-Middle	37.43	21.14	42.20	14.31	38.47	16.82

TABLE 2

TWO WAY ANALYSIS OF VARIANCE ON TASK 1 FOR CHILDREN FROM LOWER AND FROM MIDDLE AND LOWER-MIDDLE SOCIO-ECONOMIC BACKGROUNDS UNDER NEGATIVE, POSITIVE, AND NEUTRAL TEACHER AFFECT-STYLES +

Source	Sum of Squares	df	MS	F	p
Rows (socio-economic background)	638.450	1	638.450	93.79	$<.01$
Columns (affect-style)	111.244	2	55.622	8.17	$<.01$
Interaction	20.933	2	10.467	1.54	n.s.
Within cells	1184.367	174	6.807		
Total	1954.994	179			

TABLE 3

TWO WAY ANALYSIS OF VARIANCE ON TASK 2 FOR CHILDREN FROM LOWER AND FROM MIDDLE AND LOWER-MIDDLE SOCIO-ECONOMIC BACKGROUNDS UNDER NEGATIVE POSITIVE, AND NEUTRAL TEACHER AFFECT-STYLES

Source	Sum of Squares	df	MS	F	p
Rows (socio-economic background	136.939	1	136.939	95.23	<.01
Columns (affect-style)	1.411	2	.706	.49	n.s.
Interaction	2.878	2	1.439	1.00	n.s.
Within cells	250.167	174	1.438		
Total	391.395	179			

TABLE 4

TWO WAY ANALYSIS OF VARIANCE ON TASK 3 FOR CHILDREN FROM LOWER AND FROM MIDDLE AND LOWER-MIDDLE SOCIO-ECONOMIC BACKGROUNDS UNDER NEGATIVE POSITIVE, AND NEUTRAL TEACHER AFFECT-STYLES

Source	Sum of Squares	df	MS	F	p
Rows (socio-economic background)	29516.806	1	29516.806	114.11	<.01
Columns (affect-style)	276.878	2	138.439	.53	n.s
Interaction	1040.144	2	520.072	2.01	n.s
Within cells	44982.500	174	258.520		
Total	75816.328	179			

TABLE 5

MEANS AND STANDARD DEVIATIONS FOR SUBJECTS' RATINGS ON EIGHT DIMENSIONS OF THE AFFECT-STYLES PORTRAYED IN THREE VIDEOTAPES

School 1 (Inner-City)

Dimension	Affect-Style	N	Mean	Standard Deviation
Mean/nice	Negative	29	5.31	2.66
	Positive	30	5.93	2.27
	Neutral	30	6.50	1.38
Loud/quiet	Negative	28	3.39	2.67
	Positive	28	5.93	2.34
	Neutral	29	4.00	2.67
Not cool/cool	Negative	28	4.82	2.79
	Positive	29	5.31	2.71
	Neutral	30	4.30	2.85
Bad/good	Negative	28	5.18	2.60
	Positive	28	6.04	2.17
	Neutral	29	6.48	1.62
Nasty/friendly	Negative	27	5.26	2.61
	Positive	25	5.72	2.37
	Neutral	30	5.93	2.23
Doesn't like children/likes children	Negative	29	5.38	2.61
	Positive	27	6.07	2.16
	Neutral	29	6.03	2.06
Would not like me/would like me	Negative	28	5.00	2.58
	Positive	25	5.32	2.56
	Neutral	29	5.34	2.73
Out of it/ together	Negative	25	5.28	2.64
	Positive	28	5.25	2.74
	Neutral	29	5.90	2.16

School 2 (Suburban)

Dimension	Affect-Style	N	Mean	Standard Deviation
Mean/nice	Negative	30	5.90	1.66
	Positive	30	6.73	0.73
	Neutral	27	5.03	2.14
Loud/quiet	Negative	30	2.40	2.06
	Positive	30	3.63	2.34
	Neutral	26	3.65	2.35
Not cool/cool	Negative	30	4.37	2.72
	Positive	30	4.90	2.47
	Neutral	29	3.07	2.52
Bad/good	Negative	30	6.23	1.79
	Positive	30	6.23	1.59
	Neutral	29	4.83	2.55
Nasty/friendly	Negative	30	5.53	2.22
	Positive	30	6.57	1.25
	Neutral	29	5.03	2.23
Doesn't like children/likes children	Negative	30	6.10	1.97
	Positive	30	6.43	1.55
	Neutral	28	4.43	2.47
Would not like me/would like me	Negative	30	5.30	2.32
	Positive	30	5.43	2.34
	Neutral	28	3.57	2.70
Out of it/ together	Negative	30	5.30	2.32
	Positive	29	5.17	2.33
	Neutral	29	3.79	2.70

Scored on a 1 to 7 rating scale.

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